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AUTHOR	Barrett, Helen; Knezek, Don
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ABSTRACT

This paper discusses issues of assessment, accountability, and preservice teacher preparation using electronic portfolios (e-portfolios). It discusses criteria for portfolio design and trends in e-portfolio use to collect evidence of the competencies of preservice teachers that are related to teaching standards. The paper also discusses the differences between e-portfolios and online assessment management systems designed for accountability purposes related to teaching standards. In addition, it describes efforts to create an online Clearinghouse on Electronic Portfolio and Performance Assessment in Teacher Education to disseminate promising practices. Data are presented about the advantages and disadvantages of selected e-portfolio models and the progress made in some e-portfolio programs. (SLD)

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e-Portfolios: Issues in Assessment, Accountability and Preservice Teacher Preparation

Helen Barrett
Don Knezek

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This paper is prepared for the:
Annual Meeting of the American Educational Research Association in Chicago, IL
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e-Portfolios:
Issues in Assessment, Accountability and Preservice Teacher Preparation

Presenters:

Helen Barrett, Assistant Professor, University of Alaska Anchorage
Don Knezek, CEO, International Society for Technology in Education

Objectives

This presentation will inform teacher education leaders about:

- criteria for portfolio design and trends in electronic portfolio use to collect evidence of preservice teachers' competencies related to teaching standards
- differences between electronic portfolios and online assessment management systems designed for accountability purposes related to standards
- efforts to create an online Clearinghouse on Electronic Portfolio and Performance Assessment in Teacher Education to disseminate promising practices

Context/Background

The International Society for Technology in Education (ISTE), with the University of Alaska Anchorage, is involved in a PT3 catalyst project supporting development of uses of technology and assessment in teacher education. A primary goal of this initiative is to increase capacities across the teacher education community for assessing teacher candidates' progress toward attainment of ISTE's National Educational Technology Standards for Teachers (NETS-T).

The project addresses current ambiguity in the literature about the benefits of developing electronic portfolios over the traditional use of paper-based portfolios most often stored in 3-ring binders (Zeichner, 2000). The lack of a conceptual framework and limited empirical research on electronic portfolios to address teaching standards and the NETS-T adds to this ambiguity. Yet, use of e-portfolios is growing. At the 2002 Conference of the Society for Information Technology and Teacher Education (SITE) more than 40 sessions were analyzed which show a wide variety of purposes for and tools used to construct electronic portfolios.

Portfolios range from highly structured online databases to meet an organization's need for uniformity and accountability of standards to open-ended formats that foster creativity and a sense of ownership for learners in constructing their own evaluation of their work. This presentation addresses trade-offs between scaffolding learners' e-portfolio development process with highly structured templates, and fostering learners' intrinsic knowledge of themselves as developing teachers with open-ended e-portfolio designs.

Data Sources

Data will be presented about the advantages and disadvantages of selected PT3 programs' electronic portfolio models collected at ISTE's Assessment & Technology Forum (June, 2002). Trends and issues compiled from national PT3 online forums, related to e-portfolios, will also be discussed.

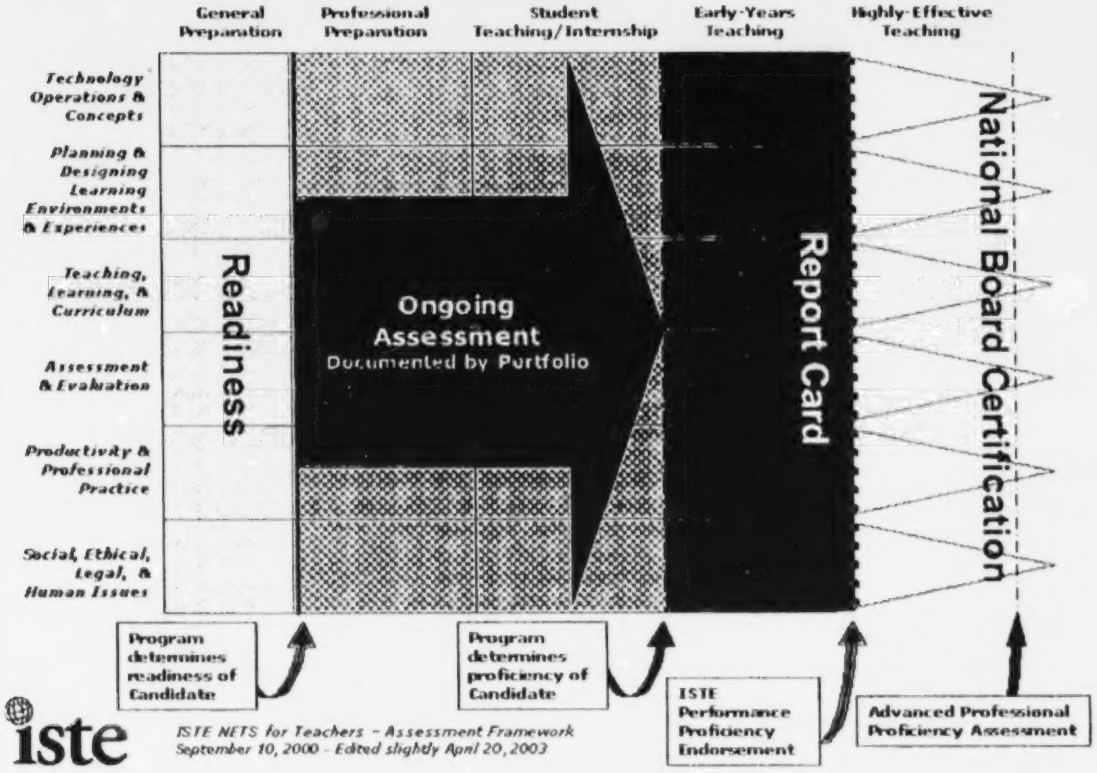

Figure 1. ISTE NETS for Teachers – Assessment Framework

ISTE's PT3 2003 Catalyst Grant Assessment Objectives:

OBJECTIVE 1 - Create an online Clearinghouse on Electronic Portfolio and Performance Assessment in Teacher Education to disseminate promising practices.

OBJECTIVE 2 - Develop and implement model assessments for entry into Teacher Education programs (at the end of the first NETS Profile).

OBJECTIVE 3 - Design relational database structure and specifications for a Learning and Assessment Management Program (LAMP) to link standards, evidence, artifacts, and assessments for replication in SOE's with traditional university campus information systems, such as Banner (Oracle) or SQL databases.

OBJECTIVE 4 - Development training and support materials will be developed and published through web site, videotapes, CD-ROM & DVD, and print materials.

OBJECTIVE 5 - Conduct at least one annual national Development Symposium on Using Technology to Support Assessment in Teacher Education in conjunction with a national or international technology conference such as SITE, ED-MEDIA or NECC.

OBJECTIVE 6 - Provide presentations or workshops on Technology and Assessment at mainstream (non-technology-focused) education conferences such as ATE, ASCD, NSBA, AERA and the h-ed strands of various curriculum organizations (NCTM, NCSS, IRA, ACTFL, NCTE, NSTA).

OBJECTIVE 7 - Develop strategies for scaling up and disseminating this information through training materials, workshops, and academies for application of best practices and implementation at the local level.

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I. Criteria for portfolio design and trends in electronic portfolio use to collect evidence of preservice teachers' competencies related to teaching standards

During the fall on 2002, there were several major meetings on electronic portfolios sponsored by the National Learning Infrastructure Initiative (Educause, 2002) and the American Association for Higher Education. Here is a preliminary list of criteria for portfolio design and trends in electronic portfolio use to collect evidence of pre-service teachers' competencies related to teaching standards. This list was developed by Helen Barrett as part of the discussion conducted by the E-PAC (Electronic Portfolio Action Committee) that planned the Electronic Portfolio Special Interest Group meeting sponsored by Educause/NLII on October 25, 2002.

Storage Space:

To store digital artifacts (with meta-tags)
To store learner self-reflection and self-assessment on each artifact
To store feedback on each artifact from assessor(s) (independent validation)
To store details of the assignment with criteria for assessment (rubrics)

Security:

Ability to restrict access, setting permissions to view:

- Artifact only
- Artifact with reflection
- Artifact with reflection and feedback

Ability to set permissions separately for faculty to view portfolio and provide feedback on work.

Linking and Grouping:

Ability to organize portfolio in a variety of ways (flexibility in organization)

- By standards or learning outcomes
- By course
- By date (entered, last updated, etc.)
- By status of work (Work in progress, ready for assessment, ready for publication)

Ability to include:

- Goals for portfolio, Contents of portfolio
- Learning Goals or Standards
- Resume

Reflection:

Ability to reflect on a specific grouping of artifacts to make a particular case (i.e., how this collections demonstrates achievement of a standard or learning goal)
Ability to set learning goals and future direction

Publishing

Ability to create a variety of portfolios, depending on audience and purpose:

- **Learning** portfolio (a reflective journal with artifacts; primary audience is the learner)
- **Assessment** portfolio (a highly-structured portfolio demonstrating achievement of learning goals or standards, with independent validation and feedback on artifacts/reflections from faculty)
- **Employment** or **Marketing** Portfolio (a semi-structured portfolio, developed for the purpose of making the case for suitability for a particular position)
- **Showcase** Portfolio (a collection of artifacts, with reflections, that demonstrate growth over time, highlighting specific achievements)

Ability to individualize the portfolio, to allow creativity of expression in the presentation (to avoid the "cookie cutter" effect or identical "look and feel" of a data-base or template-based portfolio)

Portability

Ability to archive work in a portable format such as:

- CD-ROM
- HTML or PDF Archive
- DVD

Learners can take their portfolio to another institution or maintain it on their own.

A Virtual Community of Practice has been established by Educause and AAHE, to continue the dialogue on electronic portfolios in higher education: https://worktools.si.umich.edu/workspaces/dcamrid/002.nsf A further description of electronic portfolio requirements has been posted to this discussion group that outlines both the functional and technological requirements for an online portfolio system. This matrix is also posted online at http://electronicportfolios.org/eportmatrix.htm

Trends: *(Portions of this section were adapted from the author's Introduction to the Electronic Portfolios section of the Proceedings of the 2002 Conference of the Society for Information Technology in Teacher Education.)* The use of electronic portfolios in teacher education is growing dramatically. The Proceedings of the 2002 Conference of the Society for Information Technology in Teacher Education showed over 40 presentations under the topic of Electronic Portfolios. The 2003 SITE Conference Proceedings contained over 50 sessions under the revised topic of Assessment and eFolios. These examples showcase a variety of purposes and different tools used to construct electronic portfolios, and represent levels of program implementation that closely follows the normal stages in the adoption of innovations. It is also clear that NCATE 2000 has been a major motivator and the federal PT3 program has been a major benefactor in the implementation of electronic portfolios in U.S. Teacher Education.

The commercial sector has also discovered Teacher Education: there are more than a dozen providers of electronic portfolio services (http://electronicportfolios.org/portfolios/bookmarks.html#vendors). There is even a recent movement to create an Open Source Portfolio Initiative (http://www.theospi.org) with code contributed by the University of Minnesota. A search of the PT3 website indicates that there are at least 31 projects that contain the term "electronic portfolio" and more than 50 PT3 projects use the word "portfolio" in the descriptions of their programs.

It is important to emphasize that the electronic portfolios that most of these papers and projects describe are, first and foremost, portfolios in the classic definition of the term, which just happen to be developed with a variety of technological tools and stored in a variety of electronic containers: "purposeful collections of work that demonstrate efforts, progress and achievement." The components of good portfolio development have been addressed in most of these projects, including purpose, collection, selection, and reflection on work demonstrating achievement of standards, and some projects focus on the role of the portfolio in seeking employment and ongoing professional development.

Purpose of the Portfolios

There are many purposes for portfolios, which can be for learning, formative or summative assessment, and employment. Most of these projects describe electronic assessment portfolios used primarily for demonstrating student achievement of teaching standards, with the INTASC principles most frequently mentioned. One secondary purpose often described was the demonstration of technology competency as described in ISTE's National Educational Technology Standards (NETS).

Tools used for Development and Publishing

These projects described variations on two approaches (Gibson & Barrett, 2002):

1. Using common software to construct hyper-linked portfolios (i.e., WWW pages created with a variety of templates and authoring tools was most often mentioned; other software included PowerPoint and other Microsoft Office software, and Adobe Acrobat);
2. Using WWW-accessible databases to collect the evidence and provide an online structure for the portfolio.

Several projects are exploring the role of digital video in a student's portfolio, and one University (Wake Forest) is exploring the emerging use of DVD-R to store this video. Many projects have addressed how and where to store the portfolio. A few of the SITE projects raised issues of privacy and confidentiality in portfolios published on the Internet.

Levels of Program Implementation

A majority of these projects have described implementation strategies that closely follow the Phases of Instructional Evolution in Technology-Intensive Environments outlined by Dwyer et.al. in the ACOT Research: Entry, Adoption, Adaptation, Appropriation, Invention. Many of the projects represented case studies of entry and early adoption of electronic portfolios in teacher education programs, including a description of the decisions made regarding the technology tools to be used for "electronic" component of these portfolios. A few projects document the process of adaptation and appropriation (widespread use) of the electronic portfolios. At least one program has changed the choice of technology tools based on their experience and further development (invention). There is very limited reporting of data collected and reported about the efficacy of electronic portfolio development and publishing.

Research and Implementation Issues

One study (Carney, 2002) raised issues about how the tool chosen for authoring (WWW pages) afforded and constrained the portfolio author in representing and communicating teacher knowledge, revealing a tool-related personal revelation dilemma. As she states, "Teacher education programs ought to be aware of this dilemma and take measures to ameliorate pre-service teachers' concerns about exposing problems of practice to potentially critical portfolio readers." Carney's paper at the 2003 SITE conference outlines three decisions (purpose/audience, ownership, focus) and five dilemmas of electronic portfolio development (multiple-purpose dilemma, personal-revelation dilemma, cognitive-overload dilemma, self-expression dilemma, dead-end dilemma). There is another issue that emerges when addressing the technology skills gained from the process of constructing these portfolios: Do students provided with a static template or a dynamic web-based database develop the same technology skills as those students who must create their own structure with common software tools?

Conclusions

Some interesting issues appear in these projects. In the history of human development, our tools have often shaped the outcomes of our tasks and, while many programs require WWW-based portfolios, Carney (2002) suggests a problem with that tool limiting the openness of the reflections, which Levin (2002) points out is the most important purpose of this process.

From Alverno College, Dr. Mary Diez (1994) described three metaphors for thinking about portfolios: mirror, map, and sonnet. Based on these metaphors, some questions come to mind. When the portfolio is highly structured (the sonnet), often as in an online data base to meet the organization's need for uniformity in assessment data, does it lose the creativity of expression that has been a hallmark of paper portfolios for years? Where is the sense of ownership of the portfolio creator in constructing their own paths through their work (creating their own map)? What are the trade-offs between scaffolding the development process with templates or highly structured data bases, and students gaining the knowledge that can result from the process of constructing their own hyper-linked portfolios (seeing their work in new ways—the mirror) while linking and reflecting on their work? Also, at the risk of editorializing, should these online assessment management systems really be called electronic portfolios?

There is a need for more data collection and longitudinal research on the perceptions of teacher candidates and faculty on the value and purpose of electronic portfolios, and whether the benefits extend to the classroom and enhance student learning. The question of efficacy of effort must also be addressed: there are very few studies that compare paper-based and digital portfolios. The time is right to move beyond implementation issues to research and evaluation.

II. The differences between electronic portfolios and online assessment management systems designed for accountability purposes related to standards

As noted, many Teacher Education programs are adopting electronic portfolios to meet NCATE 2000 Standard#2, Assessment System, and the implementation often resembles more of a grading or recordkeeping system that the traditional paper-based portfolio. In many ways, the implementation of electronic portfolios is changing the very definition of "portfolio" from past practice. Many electronic portfolios involve numerical scoring of artifacts against a rubric, with statistical analysis available to aggregate data collected.

There have been some examples of careful differentiation of electronic portfolio and assessment management; Baylor University (SITE, 2003) presented a very creative solution, which they programmed in-house. Students create an electronic portfolio using a template and HTML authoring tools and posted to the portfolio server. The in-house software allows a faculty member to select the student's name in the lower window and that student's portfolio appears in the upper window of a web browser. The faculty member would review the student's work (in the upper window) and complete a scoring rubric, which appears in the lower window. All of this assessment data is collected and stored in a database, which can be used for aggregation of data. However, the student portfolios were developed independent of the database environment used to collect and record the assessment data, letting the student maintain some individuality and control over the "look and feel" of their portfolios.

Below is an initial list of the differences between electronic portfolios and online assessment systems.

Electronic Portfolio	Assessment Management System
Multiple purposes: Learning, Assessment, Employment	Single purpose: Formative and Summative Assessment
Data structure varies with the tools used to create the portfolio; most often common data formats (documents converted to HTML, PDF)	Data structure most often uses a relational database to record, report data
Primary type of data: qualitative	Primary type of data: qualitative and quantitative
Data storage in multiple options: CD-ROM, videotape, DVD, WWW server, LAN	Data storage primarily on LAN or on secure WWW server
Visual design and hyperlinks most often under control of portfolio developer	Visual design and hyperlinks most often controlled by database structure

Why is it important to differentiate between electronic portfolios and assessment management systems? The literature on paper-based portfolios has raised many issues and cautions about portfolio use (Lucas, 1992): the weakening of effect through careless imitation; the failure of research to validate the pedagogy; and the co-option by large-scale external testing programs. The current trend toward online assessment management systems that are being called electronic portfolios leads to further confusion in the literature, making it difficult for research to validate the pedagogy.

A portfolio that closely emulates a paper version and just happens to be stored in an electronic container is a very different document from the current implementation of these online database systems. Technology appears to be changing the definition of "portfolio" (Batson, 2002) and many of these online systems may be careless imitations or distortions of the original purpose of portfolios. The use of portfolios as high stakes assessment may be further evidence of co-option by large-scale external testing programs. It will be important for Teacher Education programs to maintain their focus on the original purposes for which paper portfolios have been successful, and carefully assess the impact that the conversion to an electronic format will have on those original goals. Just because technology allows aggregation of portfolio data, should we succumb to this temptation? More research is needed on examples of implementation that clearly differentiate between student-owned electronic portfolios and the assessment systems used by faculty to record evidence of students' progress toward meeting standards.

III. Efforts to create an online Clearinghouse on Electronic Portfolio and Performance Assessment in Teacher Education to disseminate promising practices

In the next month, the following website will host a website to collect data from Teacher Education institutions on the use of electronic portfolios as well as the types of performance assessments that are currently used to assess technology competency as defined by the ISTE NETS for Teacher" http://cnets.iste.org/state/st_performance.html

References

Barrett, H. (2002a). "Researching the Process and Outcomes of Electronic Portfolio Development in a Teacher Education Program." Paper presented at the Society for Information Technology in Teacher Education Conference, Nashville, March 17-23. Posted online at: http://electronicportfolios.org/portfolios/SITE2002.pdf

Batson, Trent (2002) "The Electronic Portfolio Boom: What's it All About?" *Syllabus*. Available online: http://www.syllabus.com/article.asp?id=6984

Baylor University (2003) Paper presented at the Society for Information Technology in Teacher Education Conference, Albuquerque, March 24-29.

Carney, J.M. (2002). "The intimacies of electronic portfolios: Confronting preservice teachers' personal revelation dilemma." Paper presented at the Society for Information Technology in Teacher Education Conference, Nashville, March 17-23.

Carney, J.M. (2003). "Teacher Portfolios and New Technologies: Confronting the Decisions and Dilemmas." Paper presented at the Society for Information Technology in Teacher Education Conference, Albuquerque, March 24-29.

Diez, M. (1994). The portfolio: Sonnet, mirror and map. In Kay Burke (Ed.), *Professional Portfolios*. Glenview, IL: Skylight Training and Publishing.

Gibson, David & Barrett, Helen (2002). "Directions in Electronic Portfolio Development." ITFORUM listserv discussion paper for December. Posted online: http://electronicportfolios.org/ITFORUM66.html

Lucas, Catharine. 1992. Introduction: Writing Portfolios - Changes and Challenges. *Portfolios in the Writing Classroom: An Introduction*, ed. Kathleen Blake Yancey. Urbana, Illinois: NCTE: 1-11

Organizations

International Society for Technology in Education (ISTE): http://www.iste.org

Society for Information Technology in Teacher Education (SITE): http://www.aace.org/site/

National Learning Infrastructure Initiative (NLII): http://www.educause.edu/nlii/

American Association of Higher Education (AAHE): http://www.aahe.org/

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FAX: same

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